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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ZACHARIA, RAMSEY E	

ART UNIT	PAPER NUMBER
1773	

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37

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/147,813	BRAVET ET AL.	
	Examiner	Art Unit	
	Ramsey Zacharia	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *40-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *40-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the Remand to the Examiner dated 30 September 2004, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 40-65 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 40-65 require the

glass-free motor vehicle window to meet French standard R43, however, the copy of French standard R43 provided by the applicants is deficient for the following reasons.

The copy of French standard R43 provided by the applicants is dated after the filing of the instant applicant (24 July 2001 on the first page of the French standard R43 and 9 May 2001 on the second page). It is not clear if the copy provided by the applicants is the same French standard R43 that existed at the time of invention.

The summary on the second page of the French standard R43 states that the document is a working document only for internal use. As such, it is not clear whether the French standard R43 as it existed as of the filing date of the instant application was widely available to the public and whether any publicly available documents describing that standard would fulfill the requirements for essential material that may be incorporated by reference in support of the claimed subject matter.

Furthermore, the Annex 14 standard appended to French standard R43 includes strike out line markings at several pages suggesting that portions thereof may have been redacted and may not be applicable.

4. Claims 50 and 51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection. No support could be found in the specification for optically selective layers having a thickness of between 2 and 35 μm. Note that the specification

does support optically selective layers having a thickness of between 2 and 35 nm (see page 6, lines 20-35 of the instant specification).

5. Claims 40-65 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. The limitations that the glass-free motor vehicle window "meets French standard R43 for motor vehicle windows" renders claims 40-65 indefinite because the meaning of French standard R43 is indefinite for at least the reasons outlined above in paragraph 3. Since the meaning of French standard R43 is unclear, it would not possible for one skilled in the art to determine the metes and bounds of claims 40-65 even when read in light of the specification.

Claim Interpretations

7. For the purpose of examination, a glazing is taken to meet French standard R43 if the glazing is suitable for use as a motor vehicle window.

Claim Rejections - 35 USC § 103

8. Claims 40-43, 49, 52, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motter et al. (U.S. Patent 4,112,171) in view of Hirmer (U.S. Patent 5,525,401).

Motter et al. is directed to transparent structures that include abrasion resistant coatings on plastic sheets that may be used as an automotive glazing applications (column 1, lines 5-15). The transparent substrate corresponds to plastic layer a), the plastic sheet corresponds to skin

layer b), and the abrasion resistant coating corresponds to scratch-resistant layer c). The transparent substrate may be an all-plastic structure (column 1, lines 36-38). The plastic sheet is suitably polyethylene terephthalate and the abrasion resistant coating may be a 4 μm thick coating of a cured organosiloxane (column 4, lines 26-34). A polyvinyl butyral layer is disposed between the substrate and the polyethylene terephthalate that acts as an adhesive (column 4, lines 23-25). In the embodiments of the Examples a primer layer (i.e. a functional layer) is interposed between the plastic sheet and the abrasion resistant coating.

Regarding the thickness of the plastic sheet, Motter et al. teach a thickness of as low as approximately 0.005 inch, i.e. about 125 μm (claim 1). A *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). In this case, it would have been obvious to one skilled in the art to have expected the same properties (e.g. appearance, optical properties, penetration resistance) for a polyethylene terephthalate sheet having a thickness of about 125 μm and 100 μm.

Motter et al. teach that the substrate may be an all-plastic structure (column 1, lines36-38 and column 6, lines 59-68). However, Motter et al. are silent as to the thickness of a plastic transparent substrate.

Hirmer is directed to windows for use in motor vehicles (column 1, lines 4-6). Hirmer discloses that plastics, such as polycarbonate, may be used in place of glass in motor vehicle windows to reduce the weight of the window (column 1, lines 21-28). Hirmer also disclose that

suitable plastic substrates for windows have a thickness of 50 to 500 mils, i.e. about 1.25-12.5 mm (column 3, lines 50-57).

One skilled in the art would be motivated to use the polycarbonate substrate having a thickness of about 1.25-12.5 mm of Hirmer as the transparent substrate of Motter et al. to yield a glazing having reduced weight, particularly since Motter et al. explicitly teach that an all-plastic substrate may be used.

Regarding the product-by-process limitations of claim 40, when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claim in a product-by-process claim, the burden is on the applicant to present evidence from which the examiner could reasonably conclude that the claimed product differs in kind from those of the prior art. *In re Brown*, 459 F. 2d 531, 173 USPQ 685 (CCPA 1972); *In re Fessman*, 489 F. 2d 742, 180 USPQ 324 (CCPA 1974). This burden is NOT discharged solely because the product was derived from a process not known to the prior art. *In re Fessman*, 489 F. 2d 742, 180 USPQ 324 (CCPA 1974). Furthermore, the determination of patentability for a product-by-process claim is based on the product itself and not on the method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) and MPEP § 2113. In this case, the product of Motter et al. taken in view of the teachings of Hirmer appears to be structurally the same as that of the instant claims. Therefore, the burden is on the applicant to conclusively demonstrate that the recited process limitations result in a product that is patentably distinct from that of the prior art.

9. Claims 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motter et al. (U.S. Patent 4,112,171) in view of Hirmer (U.S. Patent 5,525,401) as applied to claim 40 above, and further in view of Bier et al. (U.S. Patent 5,849,414).

Motter et al. taken in view of Hirmer teach all the limitations of claims 46 and 47, as outlined above, except for specifically disclosing that the scratch resistant layer comprises a hydrophobic/oleophobic agent obtained from precursor silanes having a hydrolyzable alkoxy or halo functional group at one end and a perfluorinated carbon chain at the other end.

Bier et al. discloses scratch resistant polycarbonate molded parts in which the scratch resistant layer preferably comprises fluorinated silanes to improve water resistance (column 6, lines 3-10).

One skilled in the art would be motivated to add a fluorinated silane to the scratch resistant layer of Motter et al. to improve the water resistance of the resulting glazing.

10. Claims 48, 50, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motter et al. (U.S. Patent 4,112,171) in view of Hirmer (U.S. Patent 5,525,401) as applied to claim 40 above, and further in view of Oliver et al. (U.S. Patent 4,634,637).
For the purpose of this rejection, it is assumed that the thickness of the optically selective layers is between 2 and 35 nm.

Motter et al. taken in view of Hirmer teach all the limitations of claims 48, 50, and 51, as outlined above, except for the presence of a decorative or masking layer covering at least part of

the window, or the presence of one or more 2-35 nm thick metal layers separated by dielectric layers.

Oliver et al. disclose a solar control film that is to be laminated onto a motor vehicle window structure (column 1, lines 5-9). Oliver et al. disclose that conventionally, solar control films dyed in a vignette pattern are applied to motor vehicle windows to shade the driver without obstructing the driver's sight line (column 1, lines 31-45). Oliver et al. also teach a solar control film having optically selective metal layers having a thickness of within the range of 2-35 nm separated by dielectric layers (Figure 1 and column 5, line 34-column 6, line 19).

It would be obvious to one skilled in the art to apply one of the solar control films taught be Oliver et al. to the window of Motter et al. to reduce the impact of solar radiation on the interior temperature.

11. Claims 53-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motter et al. (U.S. Patent 4,112,171) in view of Hirmer (U.S. Patent 5,525,401) as applied to claim 40 above, and further in view of Tatebayashi (U.S. Patent 4,386,042).

Tatebayashi discloses a process for making a synthetic resin article having a hard coating. Tatebayashi discloses a wide variety of potential applications including transparent articles such as windows for meters and clocks, and lenses or covers for automobile headlights (column 1, lines 10-20). It would have been considered obvious to use the discloses method to make motor vehicle windows, such as that disclosed by Motter et al. taken in view of Hirmer.

Tatebayashi discloses a process in which a plastic film is coated with a hardcoating layer and then subjected to a heat treatment curing step (column 3, lines 25-40). The hardcoating layer

can be applied by means of a spray coating or immersion coating technique (column 2, lines 23-25). The heat treatment step in the example is disclosed to occur at a temperature of about 130 °C (column 6, line 54). Tatebayashi discloses that the molded part can be subjected to a complete heat-forming process in accordance with the desired form of the metal mold cavity within the metal mold (column 10, lines 13-18). Since the shaping process can occur within a heated mold, the hardcoating layer will be at least partially crosslinked at the same time the article is shaped. While Tatebayashi does not disclose that the heat treatment occur at a temperature of from 140 °C to 240 °C, one of ordinary skill in the art would have found it obvious to adjust the temperature to this level. The motivation for doing so would have been to impart better chemical/physical properties to the hardcoating layer. Since the process referred to by Tatebayashi involves injecting a resin material into a cavity of a mold (column 7, lines 12-15), the mold is considered to be a frame open at its center. One of ordinary skill in the art would have also found it obvious to include other functional layers, such as those disclosed by Motter et al. and Oliver et al., in addition to the scratch resistant hardcoating layer prior to the shaping step. The motivation for doing so would have been to impart better physical/chemical properties to the laminated glazing structure.

12. Claims 44, 45, and 63-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motter et al. (U.S. Patent 4,112,171) in view of Hirmer (U.S. Patent 5,525,401) as applied to claim 40 above, and further in view of EP-A1-0524417 and EP-A1-0718348.

Motter et al. in view of Hirmer teach all the limitations of claims 44, 45, and 63-65, as outlined above, except for the use of the recited scratch resistant layer.

EP '417 is directed to a coating for plastic surfaces based on a polysiloxane that provide scratch resistance and abrasion stability (page 8, lines 4-19). The coating comprises two components, A and B, where A is an organometallic compound with a polymerizable ligand and B is a polymerizable silane (page 9, line 7-page 10, line 17). As a silane, component B comprises silicon-carbon bonds. Upon mixing, the organometallic compound undergoes hydrolysis and the ligand and silane polymerize resulting in a homogeneous coating (page 12, lines 1-10 and page 13, line 16-page 14, line 18). Thus, the resulting coating will comprise inorganic (from the silane) and organic (from the ligand) molecular chains (resulting from polymerization) in a homogeneous mixture (entangled). Further support that the coating of EP '417 reads on that of instant claims 44 and 63-65 can be found in the paragraph bridging pages 4 and 5 of the instant specification.

EP '348 teaches a scratch-proof coating applied over a polycarbonate layer (page 3, lines 5-10). The coating comprises the hydrolyzed and condensed product of organosilanes (i.e. a silicon-carbon bond containing molecule) mixed with colloidal silicon dioxide (page 15, lines 1-7). This is an organically modified ceramic that will have both organic chains (from the hydrolyzed and condensed organosilanes) and inorganic chains (from the colloidal silicon dioxide) mixed (i.e. entangled) together. Further support that the coating of EP '348 reads on that of instant claims 44 and 63-65 can be found in the paragraph bridging pages 4 and 5 of the instant specification.

Thus, both EP-A1-0524417 and EP-A1-0718348 disclose the claimed scratch resistant layer comprising a network of entangled organic and inorganic chains linked to each other by silicon-carbon bonds, which are provided by Ormocer varnish. These coatings are known to be

used as scratch resistant coatings and require less hardening time. One skilled in the art would therefore have found it obvious to use these coatings as the scratch resistant layer of the structure provided by Motter et al. The motivation for doing so would have been to provide a coating layer that requires less hardening time.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones, can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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